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November 3, 1994

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Mr. William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, N.W.
Washington, D.C. 20554

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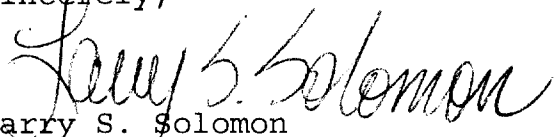
Re: PR Docket No. 93-61
Automatic Vehicle Monitoring Systems

Dear Mr. Caton:

On Wednesday, November 3, 1994, Donald Rumsfeld, a member of the Board of Directors of Metricom, Inc., Gary Green, Chief Operating Officer of Metricom, Inc., Michael Pettus, Director of Hardware Engineering of Metricom, Inc., and Henry Rivera and I, of this firm, met with Chairman Reed Hundt, his Senior Legal Assistant, Ruth Milkman, and Donald H. Gipps, Deputy Chief, Office of Plans and Policy. At this meeting the views of Metricom, Inc., as set forth in its various filings on proposed solutions and compromises in this proceeding, were discussed. In addition, Metricom's unlicensed wireless technology for interconnection to the Internet and America On Line was demonstrated. The attached materials were used in connection with Metricom's presentation at the meeting.

Two copies of this letter are being submitted to the Secretary of the Commission pursuant to § 1.1206(a)(1) of the Commission's Rules. Because various meetings ran late into the afternoon, this notice is being filed the day after the meetings.

Sincerely,


Larry S. Solomon

Attachments

cc: Chairman Reed Hundt
Ruth Milkman
Donald H. Gipps

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P.R. Docket 93-61: Automatic Vehicle Monitoring Systems

Presentation to Chairman Reed Hundt

Metricom, Inc.
November 2, 1994

FCC Encouragement of Part 15

“The new rules will significantly increase the potential range of permissible designs for Part 15 spread spectrum systems and thereby broaden the opportunities for development and use of this important new technology.”

Amendment of Parts 2 and 15 of the Rules With Regard to the Operation of Spread Spectrum Systems, (Report and Order), July 9, 1990, Paragraph 1.

FCC Support of Part 15

“Today there are literally millions of Part 15 devices operating in the 902-928 MHz band...there has recently been substantial development of, and investment in, equipment using this [2400-2483.5 MHz] band...It is unlikely that a licensed service would be able to share this band with these devices...”

*FCC Report to Ronald H. Brown, Secretary, U.S. Department of Commerce,
Regarding the Preliminary Spectrum Reallocation Report, August 9, 1994,
Paragraph 39.*

The Operational Problem

Part 15 and the new, expanded LMS service cannot co-exist as presently proposed without harm to both:

- Part 15 transmissions will interfere with new LMS receivers
- Band hierarchy enables LMS to force Part 15 devices to cease operation

The Enforcement Problem

Forcing Part 15 devices to cease operation will not work:

- Identification of interference source
- Forcing cessations of operation
- Public outcry
 - To FCC
 - To Congress
- Elimination of Part 15 applications

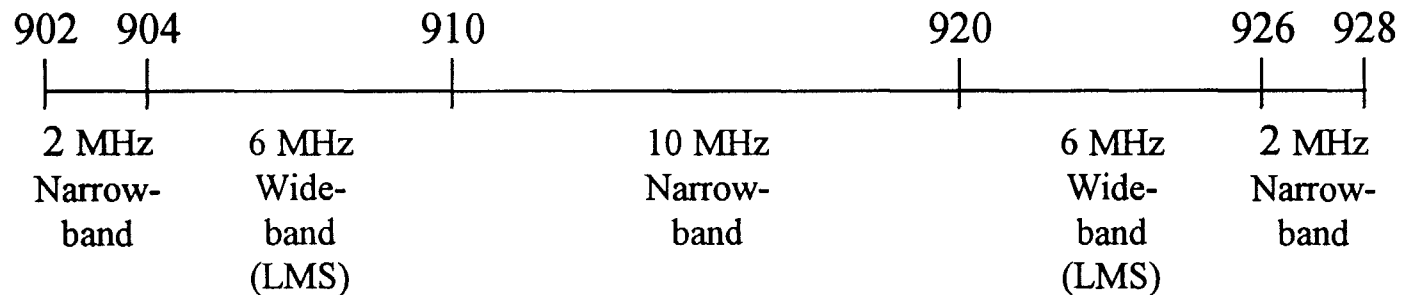
Metricom

Metricom Network Applications:

- Utility distribution automation
 - More than 20,000 radios presently installed
 - SCE: Save \$40 million and 1 billion kWh per year
- Industrial communications
 - Waste water districts
 - Gas well field monitoring
- Wide-area data communications networking
 - Access to corporate resources
 - Wireless Internet/NII
 - Low cost for schools and individuals

Staff Proposal

- Segments Band as Follows:



- In the two 6 MHz segments:
 - Part 15 operator must resolve interference if Part 15 device:
 - a. uses outdoor antenna more than 5 meters above ground
 - b. uses equipment not meeting new technical requirements
 - c. is a field disturbance device
 - Part 15 device complying with one of these thresholds is presumed not to cause interference

Staff Proposal

Threshold Issues:

- Makes Part 15 resemble licensed service
 - Each antenna location must be identified, scrutinized
 - Results in increased cost to consumers
- Imposes significant enforcement and legal burdens
 - Which specific device is causing interference?
 - House-to-house searches?

Staff Proposal

Proposed Thresholds Change Part 15 Rules:

- No FCC rule, order or discussion limits Part 15 device location
- Part 15 antennas above 5 meters do not violate any FCC rule
- Automatic thresholds are inconsistent with hierarchy rules
- Automatic thresholds are not legally sustainable

Staff Proposal

Height Restrictions Impermissibly Change Part 15 Rules.

- Beyond scope of proceeding (see Erratum)
- Arbitrarily single out a class of Part 15 devices
- Will force Part 15 devices out of band
- Discourages further development of Part 15 devices

Staff Proposal

Height Restrictions Are Technically Meaningless

- Fail to consider terrain and structures
 - relative height of interferers
- LMS receivers located and optimized to from street-level and in-building LMS transponders

Staff Proposal

Height Restrictions Devastating To:

- Metricom
- Ademco
- Cylink
- Tetherless Access
- CellNet
- Many others
- Future Part 15 development

Staff Proposal

A change of this magnitude to the original NPRM requires formal notice and comment.

Part 15 With Thresholds

- Negative impact on Part 15 businesses

- Chilling effect on R&D
- Chilling effect on investment
- Chilling effect on sales

Negative impact on consumers

- Stranded investment

\$2 billion according to Part 15 Coalition in this proceeding

- Negative impact on American economy

- American technology
- American companies
- American jobs

Conclusion

Do not adopt any resolution to this proceeding
that contains a height restriction on Part 15
devices.

FCC draws fire on its plan to auction public radio spectrum

BY ELLEN MESSMER

Washington, D.C.

In the equivalent of putting Yellowstone Park up for sale, the Federal Communications Commission last week decided to auction off a piece of the public's shared radio spectrum to drum up money for the national debt.

The FCC decision to auction off the nationwide 2,402- to 2,417-MHz band, which is used by the public on a shared, nonlicensed basis, threatens investments in wireless LANs, scientific and medical equipment, amateur radio and — yes — microwave ovens, which operate at these frequencies.

The FCC is going to let any firm buy this so-called Part 15 radio spectrum at 2.4-GHz to provide any mobile or fixed wireless service. Whoever buys it can shut down any equipment that causes interference with the new services.

"We'll let the marketplace determine how the spectrum is used," said FCC Chairman Reed Hundt last week, as the five-member commission congratulated itself on the decision, saying the creation of new services will bring new jobs.

But when asked if 2.4-GHz Part 15 devices could now be on the endangered species list, FCC engineers offered a somber assessment.

"This could have a serious impact," said Steve Sharkey, FCC engineer. "It's unclear what will happen in these bands, and we need more information about the ability of the bands to share services."

Congress, convinced that the federal government was hogging spectrum, passed legislation in 1993, forcing the Department of Commerce to select 200 MHz of spectrum to allocate to the private sector. The Commerce Department picked the 2.4-GHz Part 15 band as well two other bands — 2,390- to 2,400-MHz and 4,660- to 4,685-MHz, which the FCC also decided last week to put up for sale.

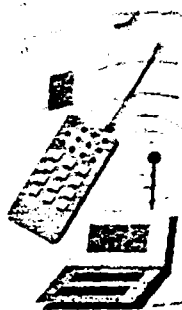
The commission brushed aside pleas from IBM, Motorola Corp., InterDigital Corp., Apple Computer, Inc., GEC Plessey Semiconductors, Inc. and others to leave the unlicensed spectrum alone. Apple had said the transfer of the band would leave "essentially no usable spectrum in the near term for the wireless information industry."

Going once, going twice

The FCC intends to auction off 2 8-MHz bands in the 902 MHz-to-928 MHz range to vendors of wireless wideband location-monitoring systems.

Devices currently operating in the 902 MHz-to-928 MHz range:

- ▶ Cordless telephones
- ▶ Garage door openers
- ▶ Wireless stereo and video
- ▶ Wireless security alarms
- ▶ Field-disturbance sensors
- ▶ Wireless bar code readers and portable computers
- ▶ Meter-reading transponders



HUNDT

band in the coming months, according to FCC engineer Ron Netro.

The FCC is letting automated vehicle monitoring providers use these two 900-MHz radio segments to test the antenna-based broadcast services, such as the TeleTrak service from AirTouch Communications. And the agency is now close to putting these two radio segments up for sale to vehicle-tracking services.

AirTouch, which operates its TeleTrak monitoring system in six cities, is interested in bidding on the Part 15 spectrum, said Kathleen Abernathy, vice president of regulatory affairs. "The spectrum is congested, but if we found interference from Part 15 devices, we'd talk with them and work out an accommodation."

Abernathy said a recent technical study — backed by several other tracking services — has shown that most Part 15 devices, with the exception of field-sensor devices, don't cause harmful interference with automated vehicle-location systems.

But the Utilities Telecommunications Council (UTC), a Washington, D.C.-based trade group, doesn't agree. "Our results are different," said UTC attorney Sean Stokes. The utilities industry has recorded interference with meter-reading devices and other equipment. Thirty-six utility firms now have \$179

The lower Part 15 band (see graphic) — from 902 to 928 MHz — is acknowledged to be more crowded than the higher 2.4-GHz range. But there may be no escape to the 900-MHz range, anyway; the FCC plans to auction two 8-MHz segments of the 902- to 928-MHz Part 15

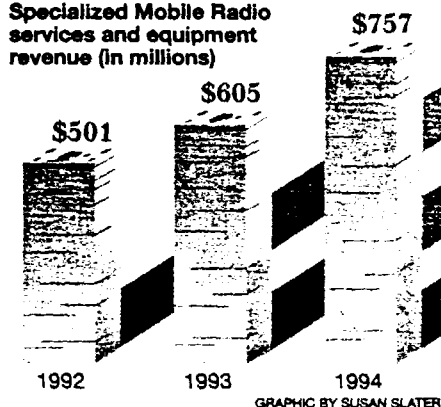
million invested in the meter-reading devices that communicate usage information, with another \$773 million of investment planned.

On learning of the FCC's action, users last week voiced concern. "We really wish they wouldn't do this," said Jack Sabo, vice president of application systems at the New York Commodities Exchange, which uses a 900-MHz Part 15 device on the stock-exchange floor there (see story, page 17). "This could impact our operations."

"We really need more bandwidth for unlicensed devices, not less," said Ira Brodsky,

Isn't that specialized?

Specialized Mobile Radio services and equipment revenue (in millions)



GRAPHIC BY SUSAN SLATER

president of consultancy Wilmette, Ill.-based Datacom Research. "The FCC is excited about the personal communications services auctions, but to act as though they want to auction off everything is simplistic."

The auctions don't seem to end. Last week, the FCC also decided to auction off Specialized Mobile Radio (SMR) spectrum, but the current 1.8 million SMR users should not face dislocation since existing SMR services are being grandfathered from the new rules. □